

REMARKS/ARGUMENTS

Favorable consideration of this Application and in light of the following discussion is respectfully requested.

Claims 3-5, 8-13 and 18-20 are pending in the present application. Claims 15-17 are cancelled, Claim 20 is added and Claims 18 and 19 are amended by the present amendment without the introduction of any new matter. Support for the amendments to the claims can be found in the specification as originally filed, for example in paragraphs [0046], [0048], [0050] and Figure 2. Thus, no new matter is added.

In the outstanding Office Action, Claim 15 was rejected under 35 U.S.C. §112, second paragraph, as indefinite; Claims 3-5, 8-13 and 16-19 were rejected under 35 U.S.C. §103(a) as unpatentable over Applicants admitted prior art (herein AAPA) in view of Tamagawa et al. (JP 2001-148371, herein “Tamagawa”), Craig A. Phelps (U.S. Pat. No. 5,724,234, herein “Phelps”) and Hannigan et al. (U.S. Pat. No. 5,999,091, herein “Hannigan”) as evidenced by Soloman (Sensors Handbook, 1999) and Shimamura et al. (U.S. Pat. No. 5,707,500, herein “Shimamura”); and Claim 15 was rejected under 35 U.S.C. §103(a) as unpatentable over AAPA, Craig A. Phelps and Hannigan in further view of Bowers et al. (U.S Pat. No. 5,680,025, herein “Bowers”).

With regard to the rejection of Claim 15 under 35 U.S.C. §112, second paragraph, as indefinite, Claim 15 has been cancelled and the features recited therein have been incorporated into newly added Claim 20 which does not recite the anodized black body of Claim 19. Accordingly, Applicants respectfully request that the rejection of Claim 15 under §112, second paragraph, be withdrawn.

Addressing now the rejection of Claims 3-5, 8-13 and 16-19 under 35 U.S.C. §103(a) as unpatentable over AAPA, Tamagawa, Craig A. Phelps, Hannigan, Soloman and Shimamura, that rejection is respectfully traversed.

Claim 18 recites, in part,

forming an opening in a portion of the conductive vessel facing a predetermined temperature measured portion on a rear face side of the susceptor, the opening having a diameter of 1/50 or less of a wavelength of the radio frequency power; and

detecting, at an external part of the opening, an infrared ray emitted from the temperature measured portion to measure the temperature of the susceptor by a radiation thermometer,

wherein said susceptor is formed of an aluminum so that a top portion of said opening is anodized so as to act as a blackbody to the infrared ray, and

wherein said radiation thermometer closes the opening of the conductive vessel.

Claims 19 and 20 recite similar features with regard to the diameter of the opening of the conductive vessel and with regard to the radiation thermometer closing the opening.

AAPA describes a method of temperature measurement of a susceptor disposed in a conductive vessel of anodized aluminum set to ground potential and having a space formed therein in which the plasma is generated by the application of the radio frequency power of 40MHz, 60MHz and 100MHz.

Tamagawa describes the use of an infrared thermometer for temperature measurement of a sample in a plasma etching chamber through a drilled hole.

The outstanding Action acknowledged on page 3 that the combination of AAPA and Tamagawa does not disclose any limitation on the size of the opening. However, the outstanding Action relies on Craig A. Phelps as curing this deficiency in AAPA and Tamagawa.

Craig A. Phelps describes that RF power leaks through openings of a size greater than the wavelength of the radio frequency and that to counter this effect any opening should be 1/20 of the wavelength.

However, Craig A. Phelps does not describe or suggest that the opening has a diameter of 1/50 or less of a wavelength of the radio frequency power. Specifically, Craig A.

Phelps makes no mention of a range for the opening; instead Craig A. Phelps only discloses the value of 1/20 of the wavelength. Thus, Applicants respectfully submit that Craig A. Phelps cannot be combined with AAPA and Tamagawa to describe that the size of the opening is 1/50 or less of a wavelength of the radio frequency power. In addition, Hannigan, Soloman and Shimomura do not cure the deficiencies of AAPA, Tamagawa and Craig A. Phelps with regard to this feature.

Further, none of the cited AAPA, Tamagawa, Craig A. Phelps, Hannigan, Soloman or Shimamura references describes or suggests that ***the radiation thermometer closes the opening of the conductive vessel***. This structural feature of the claimed invention is simply not described or suggested in any of the cited references.

For instance, while the radiation thermometer closes the opening of the conductive vessel in the claimed invention, AAPA describes that the conductive vessel is simply open at the bottom. In addition, in Tamagawa the radiation thermometer is not in any way positioned to close the opening of the conductive vessel. Thus, Applicants respectfully submit that the feature is not described or suggested by any of the cited references.

Accordingly, Applicants respectfully submit that Claims 18, 19 and 20, and claims depending therefrom, patentably distinguish over AAPA, Tamagawa, Craig A. Phelps, Hannigan, Soloman and Shimamura considered individually or in any proper combination.

Consequently, in light of the above discussion and in view of the present amendment, the present application is believed to be in condition for allowance and an early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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